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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/790,573	03/01/2004	Dale Capewell	307293 81674	9862

7590 11/02/2004
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EXAMINER

WOOD, KEVIN S

ART UNIT	PAPER NUMBER
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2874

DATE MAILED: 11/02/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

10/790,573

Applicant(s)

CAPEWELL ET AL.

Examiner

Kevin S Wood

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 02 August 2004.
- 2a) ☐ This action is FINAL. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 23-31 and 35-38 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☒ Claim(s) 35-38 is/are allowed.
- 6) ☒ Claim(s) 23 and 29 is/are rejected.
- 7) ☒ Claim(s) 24-28, 30 and 31 is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 01 March 2002 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
 - ☐ Certified copies of the priority documents have been received in Application No. _____.
 - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- ☒ Notice of References Cited (PTO-892)
- ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- ☒ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date 3/1/04.
- ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____.
- ☐ Notice of Informal Patent Application (PTO-152)
- ☐ Other: _____.

DETAILED ACTION

Election/Restrictions

1. Applicant's election without traverse of claims 23-31 and 35-38 in the reply filed on 2 August 2004 is acknowledged.

Response to Amendment

2. This action is responsive to the Election/Amendment filed on 2 August 2004. Claims 23-31 and 35-38 were elected without traverse. Non-elected claims 32-34 have been cancelled. No new claims were added and none of the claims were amended. Claims 23-31 and 35-38 are pending in the application.

Claim Informalities

3. Claims 29 recites the limitation "point sources" in the fifth line. There is insufficient antecedent basis for this limitation in the claim.
4. Claims 29 recites the limitation "TTF" in the next to last line. There is insufficient antecedent basis for this limitation in the claim.

Claim Rejections - 35 USC § 103

5. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

6. This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

7. Claims 23 and 29 are rejected under 35 U.S.C. 103(a) as being unpatentable over U.S. Patent No. 6,396,978 to Grann in view of U.S. Patent No. 4,244,045 to Nosu et al.

Referring to claim 23, Grann discloses an integrated optical assembly (optical multiplexer/demultiplexer), including: a fiber collimator (65) that redirects and collimates a light beam (91) from an optical source input (optical cable), creating a collimated light beam (92); at least two focusing lenses (70) being aligned along a common axis; and an optically transparent block (20) that receives the collimated light beam from the fiber collimator, the optically transparent block (20) having a top side (85) coated to act as a reflective mirror and a bottom side including wavelength filters (40), each with a different passband wavelength and each being positioned over each focusing lens, the top side being the side opposite to at least one of the fiber collimator and the focusing optical lenses, wherein the collimated light beam travels in a zig-zag fashion within the optically transparent block, wavelength components of the collimated light beam being separated

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from each other by the filters with matching passband wavelength and focused by the focusing lenses below the filters. Grann does not appear to specifically disclose that the passband wavelength filters (40) are thin film filters and Grann does not appear to specifically disclose that the focusing lenses are focusing subassemblies. Nosu et al. discloses an optical demultiplexer similar to that claimed by Grann. The optical multiplexer/demultiplexer of Nosu et al. uses thin film filters (11-16) as passband filters, for the purpose of allowing a certain band of wavelengths to pass through the filter while reflecting all other wavelengths. It is clear that the thin film filters disclosed by Nosu et al. could and would perform the same demultiplexing process as the fabry perot filters used within the Grann reference. Nosu et al. also discloses the use of focusing assemblies (41-46) for the purpose of focusing the demultiplexed light from each thin film filter, into separate optical fibers (51-56). It is also clear that the focusing assemblies (41-46) could and would perform the same focusing process as the focusing lenses (70) used within the Grann reference. Since the Grann reference and the Nosu et al. reference are both from the same field of endeavor (multiplexing/demultiplexing of optical signals), the purpose disclosed by Nosu et al. would have been recognized in the pertinent art of Grann. It would have been obvious to one having ordinary skill in the art at the time the invention was made to utilize the filters and focusing assemblies of the Nosu et al. reference within the device disclosed by Grann, for the purpose of demultiplexing the light signal and directing each of the wavelength bands into different optical fibers. See the figures of each of the references, especially Fig. 1 of the Grann reference and Fig. 12 of the Nosu et al. reference.

Referring to claim 29, Grann discloses an optical multiplexer of a zig-zag design, including: a fiber coupler (65) that redirects and couples a light beam (91) with different wavelength components into an optical fiber; at least two collimating optical lenses (70) being aligned along a common axis; and an optically transparent block (20) that receives light beams with different wavelength components, the optically transparent block (20) having a top side (85) coated to act as a reflective mirror and a bottom side including wavelength filters (40), each with a different passband wavelength and each being positioned over each collimating lens, the top side being the side opposite to at least one of the fiber coupler and the collimating optical lenses, wherein the light beams from the point sources travel through the collimating lenses, the filters, the optical transparent block and the fibers coupler into the optical fiber cable. Grann does not appear to specifically disclose that the passband wavelength filters (40) are thin film filters and Grann does not appear to specifically disclose that the collimating lenses are collimating subassemblies. Nosu et al. discloses an optical multiplexer similar to that claimed by Grann. The optical multiplexer/demultiplexer of Nosu et al. uses thin film filters (11-16) as passband filters, for the purpose of allowing a certain band of wavelengths to pass through the filter while reflecting all other wavelengths. It is clear that the thin film filters discloses by Nosu et al. could and would perform the same multiplexing process as the fabry perot filters used within the Grann reference. Nosu et al. also discloses the use of collimating assemblies (41'-46') for the purpose of collimating the light beams from source while directing the beams into the optical block.

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It is also clear that the collimating subassemblies (41'-46') could and would perform the same collimating process as the aspheric lenses (70) used within the Grann reference. Since the Grann reference and the Nosu et al. reference are both from the same field of endeavor (multiplexing/demultiplexing of optical signals), the purpose disclosed by Nosu et al. would have been recognized in the pertinent art of Grann. It would have been obvious to one having ordinary skill in the art at the time the invention was made to utilize the filters and collimating assemblies of the Nosu et al. reference within the device disclosed by Grann, for collimating each of the wavelength bands and multiplexing the light signals. See the figures of each of the references, especially Fig. 1 of the Grann reference and Fig. 14 of the Nosu et al. reference.

Allowable Subject Matter

8. Claims 35-38 are allowed.
9. Claims 24-28 and 30-31 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.
10. The following is a statement of reasons for the indication of allowable subject matter:

Referring to claims 35-38, the prior art does not appear to disclose the combination of all the claimed limitations. Specifically, the prior art does not appear to disclose edge emitting lasers providing elliptically divergent light beams, the elliptically

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divergent light beams being redirected and collimated into circular light beams, where the circular light beams travel through thin film filters.

Referring to claims 24-28, the prior art does not appear to disclose the combination of all the claimed limitations. Specifically, the prior art does not appear to disclose a ledge structure adapted for positioning a printed circuit board parallel to and a distance from the focusing assemblies.

Referring to claims 30-31, the prior art does not appear to disclose the combination of all the claimed limitations. Specifically, the prior art does not appear to disclose a controlled degree of magnification for the light entering the fiber core.

Conclusion

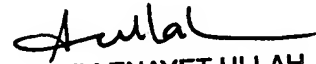
11. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Kevin S Wood whose telephone number is (571) 272-2364. The examiner can normally be reached on Monday-Thursday (7am - 5:30 pm).

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Rodney B Bovernick can be reached on (571) 272-2344. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

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Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

KSW


AKM ENAYET ULLAH
PRIMARY EXAMINER